

Remarks/Arguments:

Claims 1 and 4, amended hereby, and claims 5-7, previously presented, are pending.

Claims 2 and 3 are cancelled, without prejudice or disclaimer.

Claim 1 is amended by incorporating the subject matter of original claims 2 and 3, i.e., amended claim 1 corresponds, essentially, to original claim 3. Claim 1 is further amended to more clearly define the invention, i.e., by identifying individual components in sub-paragraphs "a)"-"d)" and, further, by deleting (from line 3) "as a main component," for reasons explained below. Claim 4 is amended in order to be dependent on claim 1 (instead of claim 2).

The specification is amended, hereby, to update the status of the parent application, as requested in the instant Office Action.

Claims 1-7 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. Reconsideration is requested in view of the changes to the claims effected hereby.

According to the statement of rejection, the claim language "as a main component," in line 3 of claim 1, is unclear. Since the language at issue is deleted from the claims by the instant amendment, this reason for the rejection is rendered moot.

As applied against claim 2, the rejection is rendered moot by cancellation of the claim, hereby. It is noted, however, that the allegedly indefinite language in claim 2 is incorporated into claim 1 (as indicated above) in a manner that satisfies the requirements of § 112, ¶ 2.

Since the reasons for the § 112, ¶ 2, rejection are rendered moot by the instant amendment, withdrawal of the rejection appears to be in order.

Claims 1-5 and 7 were rejected based on obviousness-type double patenting, in view of claims 1-6 of U.S. 6,657,035. The rejection is overcome in view of the terminal disclaimer submitted herewith and withdrawal of the rejection appears to be in order.

Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being allegedly anticipated by JP 11-263962 (JP'962). Claims 1, 2, 5 and 7 were rejected under 35 U.S.C. 102(b) as being allegedly anticipated by U.S. 6,362,300 (Araki). The rejections under §102(b) are rendered moot by the amendments to the claims effected, hereby; all of the pending claims (present claims 1 and 4-7) contain the subject matter of original claim 3, which was not rejected under either of the §102(b) rejections. Accordingly, withdrawal of the rejections under §102(b) appears to be in order.

Claims 1-7 were rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over, either, JP'962 or Araki, each taken together with U.S. 3627722 (Seiter), U.S. 4857623 (Emmerling), and U.S. 6875303 (Samurkas). Reconsideration is requested.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art," *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), "and it is error to ignore specific limitations distinguishing over the [prior art] reference." *Ex parte Murphy*, 217 USPQ 479, 481 (PO Bd. App. 1982). A "ground of rejection is simply inadequate on its face . . . [when] the cited references do not support each limitation of [the] claim." *In re Thrift*, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002).

JP'962 (claim 1) provides a moisture-curable, one-component polyurethane adhesive, having low viscosity and high adhesive strength. This moisture-curable adhesive comprises an isocyanate-terminated urethane prepolymer in combination with N-methyl-2-pyrrolodone.

Preferably (in accordance with claim 4), the adhesive of JP'962 further comprises one or more amine compounds, i.e., bis(morpholinoethyl)ether, bis(2,6-dimethylmorpholinoethyl)ether, or bis(3,5-dimethylmorpholinoethyl)ether.

As described in the reference specification, JP'962 (paragraph 0027) teaches that the polyurethane adhesive can also include a polyisocyanate component, exemplified by hexamethylene diisocyanate (HMDI). The reference specification (paragraph 0042) also teaches that the urethane adhesive optionally includes an additional curing catalyst, e.g., an organometallic catalyst such as dibutyltin dilaurate. Still further, the referenced specification (paragraphs 0043 and 0051) teach that the adhesive can include a silane coupling agent, such as γ -aminopropyltrimethoxysilane and γ -glycidoxypentyl-triethoxysilane and reaction products of these coupling agents.

According to the statement of rejection, Araki discloses a moisture-curable, one-component, polyurethane adhesive, comprising a urethane prepolymer, morpholino catalysts, silane coupling agent (or a silane-polyisocyanate adduct) and dibutyltin dicarboxylate catalyst. As acknowledged in the statement of rejection, Araki does not disclose the subject matter of present original claim 3, i.e., the "hexamethylene diisocyanate derivative" selected from at least one of "biuret derivatives, isocyanurate derivatives and trimethylolpropane derivatives."

The presently claimed invention provides a moisture-curable one-pack, urethane adhesive. The presently claimed adhesive (composition) effectively bonds glass, without using any primer, to painted steel. Ordinarily, bonding glass to painted steel without the use of any primer is difficult to achieve; however, after intensive investigation, Applicants found that an adhesive composition suitable for the purpose is obtained by the combination of (a) an isocyanate-group-terminated urethane prepolymer, (b) a particular hexamethylene diisocyanate derivative, (c) a particular adhesive promoter, and (d) a particular combination of curing catalysts. None of the cited references, taken alone or as combined in the statement of rejection, teaches or suggests the aforesaid combination of components (a)-(d)—as a moisture-curable, one-pack urethane adhesive composition—which effectively bonds glass to painted steel, without using any primer.

Nevertheless, according to the statement of rejection, each of JP'962 and Araki fully meets the component limitations on the present claims, except for components "polyisocyanate derived silane coupling agent [and] the use of hexamethylene diisocyanate derivatives" (Office Action, page 5), with the missing components being allegedly obvious modifications of both primary references. Specifically, it allegedly would have been obvious to add the missing components (i.e., "polyisocyanate derived silane coupling agent [and] the use of hexamethylene diisocyanate derivatives") to the adhesive disclosed in each of JP'962 and Araki because the missing components "were known components for moisture-curable polyurethane compositions" (Office Action, page 5, emphasis added), as allegedly disclosed in Seiter (column 2), Emmerling (column 2 and examples), and Samurkas (column 6, lines 24-56, especially lines 31 and 32). The § 103(a) rejection

cannot be maintained because it fails to show the requisite prior art motivation for combining the teachings of the secondary references with each of the primary references—merely that the components missing from the primary references were "known" in the art fails to satisfy the requirements for establishing obviousness under §103(a).

When the claimed invention requires modification of the prior art, there is no obviousness under §103 when "[t]he prior art does not suggest . . . [the] modification . . . or provide any reason or motivation to make the modification." *In re Laskowski*, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989), and the "Examiner bears [both] the initial burden . . . of presenting a *prima facie* case of unpatentability" and "the ultimate burden of persuasion on the issue." *In re Oetiker*, 24 USPQ 1443, 1444 and 1447 (Fed. Cir. 1992) (*emphasis, added*).. "The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art *would lead* that individual to combine the relevant references. . . . Indeed, the teachings of the references can be combined only if there is some suggestion or incentive to do so." *Ex parte Obukowicz*, 27 USPQ 1063, 1065 (BPA&I 1992)(*emphasis, added*).

The fact that all elements of a claimed invention are *known* does not, by itself, make the combination obvious. *Ex parte Clapp*, 227 USPQ 972 (BPA&I 1985). It is legally erroneous to reach a conclusion of obviousness under §103 solely on the basis that the claimed invention represents a "combination which only unites old elements with no change in their functions." *Pentec, Inc. v. Graphic Controls Corp.*, 227 USPQ 766, 771 (Fed. Cir. 1985).

[I]nvention itself is the process of combining prior art in a nonobvious manner [*citations, omitted*]. Therefore, even when the

level of skill is high, the . . . [PTO] must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.

In re Rouffet, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

The rejection mistakenly relies solely on the alleged fact that components (of the presently claimed invention) missing from each of JP'962 and Araki were known, individually, in order to show that it would have been obvious to use the missing components in either JP'962 or Araki. Merely that all elements of a claimed invention were known in the art does not, by itself, satisfy the requirements for making a prima facie showing of obviousness under §103(a). *Pentec, Inc., supra. Rouffet, supra. Clapp, supra.* Accordingly, the rejection under §103(a) appears to be in order for withdrawal.

Applicants are mindful of the decisions *In re Linder*, 173 USPQ 356, and *In re Dial*, 140 USPQ 244, cited in support of the position taken in the statement of rejection, i.e., that use of a known component for its known purpose is *per se* obvious. However, the *Linder* and *Dial* decisions are not controlling in the present case, the present case being clearly distinguishable from the facts on which each decision was based.

Moreover, assuming arguendo, to the extent that the *Linder* and *Dial* decisions do support the position taken in the statement of rejection, to that extent the decisions have been overruled, *sub nom. Pentec, Inc., supra. In re Ochiai*, 37 USPQ2d 1127, 1129 (Fed. Cir. 1995) ("Reliance on *per se* rules of obviousness is legally incorrect and must cease").

Furthermore, none of the secondary references, taken alone or in combination with one another, discloses all of the component limitations of the present claims.

Seiter discloses a polyurethane sealant composition containing a NCO group-terminated urethane prepolymer and a silyl group-terminated polyurethane polymer prepared by reacting a part of the NCO groups of the urethane prepolymer with a silane. The silyl group-terminated polyurethane polymer differs from the adhesive promoter used in the presently claimed invention. The polyisocyanate derivative of a silane coupling agent used in the presently claimed invention (as the adhesive promoter) is NCO group-terminated. Importantly, Seiter does not disclose all the components—a) through d)—of the presently claimed adhesive composition.

Emmerling discloses an alkoxysilane-terminated, moisture-hardening polyurethane prepared by reacting substantially all the free NCO groups in a particular NCO group-terminated polyurethane with at least one alkoxysilane. The alkoxysilane-terminated polyurethane differs from the adhesive promoter used in the present invention. Again, the polyisocyanate derivative of a silane coupling agent used in the presently claimed invention (as the adhesive promoter) is NCO group-terminated. Importantly, Emmerling does not disclose all the components—a) through d)—of the presently claimed adhesive composition.

Samurkas discloses a process for bonding glass to a substrate without the need to prime the surface of the substrate. Samurkas also discloses that a NCO group-terminated polyurethane adhesive may be used for the process, and that the adhesive may contain a tin catalyst and an adhesive promoter such as vinyl alkoxysilanes and isocyanatoalkoxysilanes. Importantly, Samurkas

does not disclose all the components—a) through d)—of the presently claimed adhesive composition.

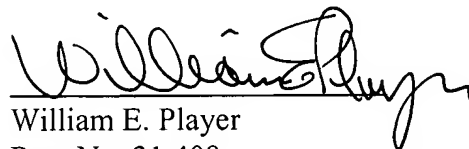
As explained, above, none of the secondary references cited in the Office Action discloses the presently claimed adhesive composition—comprising all the components a) through d). In particular, these references neither disclose nor suggest the use of a particular hexamethylene diisocyanate derivative (b) as an essential component, in addition to an isocyanate group-terminated urethane prepolymer (a). Accordingly, based on the secondary references, alone, all limitations on the present claims are neither taught nor suggested; and, as such, a *prima facie* case of obviousness—based on the secondary references—is not established. *Royka, supra*.

Favorable action is requested.

Respectfully submitted,

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